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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/668,393	09/23/2003	Jon Godston	010398-9065-02	2524
7590 07/05/2006 Michael Best & Friedrich LLP 100 East Wisconsin Avenue Milwaukee, WI 53202-4108			EXAMINER ALIE, GHASSEM	
			ART UNIT 3724	PAPER NUMBER

DATE MAILED: 07/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/668,393	<b>Applicant(s)</b> GODSTON ET AL.	
	<b>Examiner</b> Ghassem Alie	<b>Art Unit</b> 3724	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 05/08/06.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 14-21 and 44-57 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 14-21 and 44-57 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 May 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

Obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patent ability shall not be negative by the manner in which the invention was made.

2. Claims 14-17, 21, 44-46, 48-50, and 54-57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sopko (4,993,291) in view of Groswith, III et al. (5,163,350), hereinafter Groswith, or Renfrew (41,861). Regarding claims 14 and 47, Sopko teaches a punch including a linkage mechanism 15, 163, 169 and a punch element 27 which is associated with a drive surface 171 defined by a first member 169 of the linkage. Sopko also teaches that the drive surface 171 defining a drive surface center. Sopko also teaches that upon actuation of the linkage, an arcuate motion of the drive surface produces an arcuate motion of the drive surface center and drives the punch element 27 to pinch a hole in a workpiece. It should be noted that the first member 169 of the linkage has a cylindrical shaft 171 that pushes the punch 27 downward by an arcuate motion as shown in Fig. 5 and 6 in Spoko. Sopke also teaches the drive surface at least partially defined by a first member 169 of the linkage. It should be noted that upon arcuate motion of the drive surface 171, the center of the drive surface, which is considered to be the drive surface center, inherently moves in an arcuate motion. The arcuate motion of the drive surface takes place when the drive link 169 rotates approximately 30 degrees to a vertical position as shown in Figs. 5-6. The drive surface and its center also rotate with the drive link 169.

Sopko does not teach that the linkage is a four bar linkage. However, the use of a four bar linkage for actuating at least a punch is well known in the art such as taught by Groswith or Renfrew. Groswith teaches a punch 12 for punching a workpiece including a four bar linkage 32 having at least four members 33-36. See Figs. 1-23 and col. 5, lines 16-668 and col. 6, lines 1-68 and col. 11, lines 1-32 in Groswith. Renfrew also teaches a punch for punching a workpiece including a four bar linkage having at least four members AHLI. Renfrew also teaches that at least one punch E operably associated with a first link member I of the linkage. See Figs. 1-3 and page 1 in Renfrew.

It would have been obvious to a person of ordinary skill in the art to provide Sopko's punch actuating mechanism with the four bar linkage, as taught by Groswith or Renfrew, since Sopko's punch actuating mechanism functionally is equivalent to Groswith's four bar linkage or Renfrew's four bar linkage. In addition, it would have been obvious to a person of ordinary skill in the art to replace Sopko's punch actuating mechanism with the four bar linkage, as taught by Groswith or Renfrew, since the four bar linkage reduces the force needed to actuate a punch and produces a heavy leverage for forcing the punch into the workpiece.

Regarding claims 15 and 48, Sopko, as modified above, teaches everything noted above including that upon actuation of the linkage, the first member 169 of the linkage abuts the at least one punch element 27. See Figs. 1-6 in Sopko.

Regarding claims 16 and 49, Sopko, as modified by above, teaches everything noted above including a second member of the linkage is configured to support the remaining member of the linkage and the at least one punch element 35, 50, 85. It should be noted that

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any of member of the linkage 33-36 can be considered as a second member that supports the remaining members and the punch 35, 50, 85 by a punch plate that is connected to the linkage 32. See Figs. 7-23 in Groswith.

Regarding claims 17, 21, 50, and 54, Sopko, as modified by above, teaches everything noted above including that the first member 169 of the linkage operates the at least one punch element 27 by imparting a camming action upon the at least one punch element. Sopko, as modified above, also teaches that the linkage 169 is actuated upon a motion of a third member of the linkage and the first and third members are pivotally associated. See Figs. 1-6 in Sopko and Figs. 1-3 in Groswith or Renfrew.

Regarding claims 44-46 and 55-57, Sopko, as modified above, teaches everything noted above including that the first member 169 of the linkage includes a drive member 171 coupled to the first member 169 and the drive member at least partially defining the drive surface. Sopko, as modified above, also teaches that the drive member 171 is substantially a cylindrical bar and the drive surface is substantially arcuate. See Figs. 1-6 in Sopko.

3. Claims 14-21 and 44-57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Otsuka et al. (3,921,487), hereinafter Otsuka in view of Groswith, III et al. (5,163,350), hereinafter Groswith, or Renfrew (41,861) and in further view of Sopko (4,993,291).

Regarding claims 14 and 47, Ostuka teaches a punch for punching at least one sheet of paper including a support portion 8, 12, 16 which includes an arcuate portion. The perforated plate, the guide member 12, and the guide pieces 16 define the support portion. The upper section of the guide member 12 includes an arcuate portion. Ostuka also teaches at least a punch

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mechanism 7, 24 operably associated with the support portion 8, 12, and 16 to punch the sheet of paper upon actuation of the punch 7. See Figs. 1-4 in Otsuka.

Otsuka does not teach a four bar linkage as an actuating device which includes at least four members. Otsuka also does not teach that at least one punch element operably associated with a drive surface defined by the first member of the linkage wherein, upon actuation of the linkage, an arcuate motion of the drive surface drives the punch element to punch a hole in the workpiece.

However, the use of a four bar linkage for actuating at least a punch is well known in the art such as taught by Groswith or Renfrew. Groswith teaches a punch 12 for punching a workpiece including a four bar linkage 32 having at least four members 33-36. Groswith also teaches that at least one punch 35, 50, 85 operably associated with a first link member 33. See Figs. 1-23 and col. 5, lines 16-668 and col. 6, lines 1-68 and col. 11, lines 1-32 in Groswith. Renfrew also teaches a punch for punching a workpiece including a four bar linkage having at least four members AHLI. Renfrew also teaches that at least one punch E operably associated with a first link member I of the linkage. See Figs. 1-3 and page 1 in Renfrew.

It would have been obvious to a person of ordinary skill in the art to replace Otsuka's punch actuating mechanism with the four bar linkage, as taught by Groswith or Renfrew, since Otsuka's punch actuating mechanism functionally is equivalent to Groswith's four bar linkage or Renfrew's four bar. In addition, it would have been obvious to a person of ordinary skill in the art to replace Otsuka's punch actuating mechanism with the four bar linkage, as taught by Groswith or Renfrew, since the four bar linkage reduces the force

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needed to actuate a punch and produces a heavy leverage for forcing the punch into the workpiece.

Otsuka, as modified by Growswith or Renfrew, does not explicitly teach that the punch element is associated with a drive surface defined by a first member of the linkage wherein, upon actuation of the linkage, an arcuate motion of the drive surface drives the punch element to pinch a hole in the workpiece.

However, Sopko teaches a punch including a linkage mechanism 15, 163, 169 and a punch element 27 which is associated with a drive surface 171 defined by a first member 169 of the linkage wherein, upon actuation of the linkage, an arcuate motion of the drive surface drives the punch element 27 to pinch a hole in a workpiece. It should be noted that the first member 169 of the linkage has a cylindrical shaft 171 that pushes the punch 27 downward by an arcuate motion as shown in Fig. 5 and 6 in Spoko.

It would have been obvious to a person of ordinary skill in the art to replace the drive member of Otsuka's punch actuating mechanism, as modified by Groswith or Renfrew, with the drive member of the first member of the linkage, as taught by Spoko, in order to facilitate the replacement of the punch element and actuate the punch in an alternative way that Produce the same result which is actuation of the punch.

Regarding claims 15 and 48, Otsuka, as modified above, teaches everything noted above including that upon actuation of the linkage, the first member 169 of the linkage abuts the at least one punch element 27. See Figs.1-6 in Sopko.

Regarding claims 16 and 49, Otsuka, as modified by above, teaches everything noted above including a second member of the linkage is configured to support the remaining

member of the linkage and the at least one punch element 35, 50, 85. It should be noted that any of member of the linkage 33-36 can be considered as a second member that supports the remaining members and the punch 35, 50, 85 by a punch plate that is connected to the linkage 32. See Figs. 7-23 in Groswith.

Regarding claims 17, 21, 50, and 54, Otsuka, as modified by above, teaches everything noted above including that the first member 169 of the linkage operates the at least one punch element 27 by imparting a camming action upon the at least one punch element. Otsuka, as modified above, also teaches that the linkage 169 is actuated upon a motion of a third member of the linkage and the first and third members are pivotally associated. See Figs. 1-6 in Spoko and Figs. 1-3 in Groswith or Renfrew.

Regarding claims 18 and 51, Otsuka, as modified by above, teaches everything noted above including that one of the at least four members includes a support member 16 to accommodate and locate the workpiece in an upward punching position. See Fig. 1 in Otsuka and Figs. 7-23 in Groswith.

Regarding claims 19, 20, 52, and 53, Otsuka teaches everything noted above including that the support member 16 is oriented at an angle from a vertical. It appears that the angle of the support member 16 with respect to a vertical is 45 degrees from the vertical line. See Fig. 2 in Otsuka. Otsuka, as modified above, does not expressly teach that the angle is less than 40 degrees or less than 25 degrees. However, it would have been to orient the support member at an angle from a vertical, which is less than 45 degrees or 25 degrees, since the specific angle of the support member with respect to a vertical, is not critical to the function of the support member and it is a matter of a design choice to provide the support



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member with a specific angle with respect to a vertical. In addition, applicant does not teach that less than 45 degrees or less than 25 degrees angle of the support member with respect to a vertical is critical to the instant invention. Furthermore, the use of support members that are oriented upright to an angle less than 25 degrees or less than 45 degrees to a vertical is well known in the art such as taught by Scharer (4, 645,399), Hu (5,575,188), or Becker (2,421,864). Becker's support portion is even adjustable relative to the vertical line which is perpendicular to the base of a punching device.

Regarding claims 44-46 and 55-57, Otsuka, as modified above, teaches everything noted above including that the first member 169 of the linkage includes a drive member 171 coupled to the first member 169 and the drive member at least partially defining the drive surface. Otsuka, as modified above, also teaches that the drive member 171 is substantially a cylindrical bar and the drive surface is substantially arcuate. See Figs. 1-6 in Sopko.

#### ***Response to Amendment***

4. Applicant's arguments that Sopko does not teach that the rotation of the drive surface produces an arcuate motion of the drive surface center is not persuasive. It should be noted that upon arcuate motion of the drive surface 171, the center of the drive surface, which is considered to be the drive surface center, inherently moves in an arcuate motion. The arcuate motion of the drive surface takes place when the drive link 169 rotates approximately 30 degrees to a vertical position as shown in Figs. 5-6. The drive surface and its center also rotate with the drive link 169.

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***Conclusion***

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ghassem Alie whose telephone number is (571) 272-4501. The examiner can normally be reached on Mon-Fri 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Boyer Ashley can be reached on (571) 272-4502. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, SEE <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

GA/ga

January 30, 2006

  
**BOYER D. ASHLEY**  
SUPERVISORY PATENT EXAMINER